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Atmospheric Measurement Techniques Discussions

Interactive comment on "Improving the TROPOMI CO data product: update of the spectroscopic database and destriping of single orbits" *by* Tobias Borsdorff et al.

Anonymous Referee #1

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The authors present an update on the TROPOMI CO product, focusing on the evaluation of new spectroscopy and handling of a striping issue. The manuscript is well written and the authors evaluate different spectroscopy databases by comparing retrieved CO against the CAMS-IFS model as well as various ground-based measurements from the TCCON network.

I can recommend the manuscript for publication, however have following minor suggestions/corrections:

Page 5, Line 27: "[...] striping pattern along [...]", should probably read "[...] striping pattern across [...]"

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Page 5, Line 30: The authors mention that the striping is not yet understood, however it would be interesting for the reader to know if there is any clue (bad pixels, 'just' calibration?), or if the issue affects any other TROPOMI-derived products. Is it always the same cross-track pixels that show a systematic deviation?

Page 6, Line 5: It would be good to state whether any data manipulation is done for "d" before the 2D Fourier Transformation is applied (filtering, masking, how is missing data treated, etc.)

Figure 4: The std of clear-sky soundings at the Edwards ground station seems "out of order" or considerably higher than cloudy or mixed scenes. I have not found any reference to this in the text, and it seems like an odd outlier that might deserve a sentence or two. Or is this merely due to one overpass towards end of July 2018 (Figure 2)?

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